

New Victorian endemic species of *Poa* L. (Poaceae)

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Abstract

Three new Victorian species of *Poa*, *P. amplexicaulis* C.M. Weiller & Stajsic, *P. orthoclada* N.G. Walsh and *P. orba* N.G. Walsh are described and illustrated and their distribution, ecology and conservation status discussed.

Introduction

During the course of preparing descriptions of Australian *Poa* species for the *Flora of Victoria*, vol. 2 (Walsh 1994) and the forthcoming *Flora of Australia* (in ed.), some previously undescribed species have come to light. Two of the species described below (*P. orthoclada* and *P. orba*) were treated erroneously in the *Flora of Victoria* (one as a species now believed to be endemic to Tasmania, the other as an introduction from New Zealand). The other, *P. amplexicaulis* is a novelty endemic to the state of Victoria. The opportunity is taken here to describe these new species so that the names are available for use in the forthcoming volume 44 of *Flora of Australia*.

Taxonomy

1. *Poa amplexicaulis* C.M. Weiller & Stajsic *sp. nov.*

Poa sp. aff. *teuera* (Brisbane Ranges), J.H. Ross & N.G. Walsh, Census Vasc. Pl. Victoria 7th edn. 38, 228 (2003).

A *P. teuera* vaginis rubris, ligula amplexicauli, caulibus brevibus, erectis vel suberectis vel planta caespitosa, lennate glabro plerumque nervato indistincte differt.

Type: 9 km W of Bacchus Marsh, just S of Ballarat – Melbourne railway line, 13.x. 1973, T.B. Muir 5186 (holotype MEL 2138583; isotype CANB).

Slender perennial, caespitose with short suberect stolons. Leaves mostly basal. Culms 14–40 cm high. Mid-culm internodes more or less terete or slightly compressed, glabrous or minutely scabrous immediately below the node, occasionally pigmented. Young shoots intravaginal. Basal leaf sheaths glabrous, strongly reddish and shining, the old sheaths straw-coloured; margins connate for their entire length. Ligule prominent, membranous, usually encircling the culm, decurrent, 0.8–2.6 mm long, smooth, truncate or obtuse (sometimes with an apicule), abaxially sparsely hairy. Leaf blades dull yellow-green or green, occasionally pigmented, folded (the margins usually slightly inrolled), 4–11.5 cm long, 0.2–0.9(–1.3) mm wide when flattened; usually striate; adaxially minutely scabrous; abaxially smooth and glabrous; tip usually tapering and slightly curved to a point or occasionally broad and hooded. Inflorescence narrow, 35–100 mm long. Spikelets with 2–7 florets, 2.8–6.2 mm long, green tinged purple or rarely entirely purple. Glumes partly or entirely pigmented, subequal, 1/2–2/3 the length of the proximal lemma, acute, keel scaberulous, intercostal regions glabrous or scaberulous towards apex; lower glume 1.5–2.1 mm long, 1 or 3 nerved; upper glume 1.7–2.8 mm long, 3 nerved. Lemma 2.3–3 mm long, often with a subapical band of pigment or entirely purple except for a broad colourless band at the apex and a narrow band on the margins, acute to obtuse, 5 nerved, nerves scaberulous in the upper part, glabrous or puberulous on the lower part of the midnerve and towards the base on marginal nerves; intercostal regions glabrous or

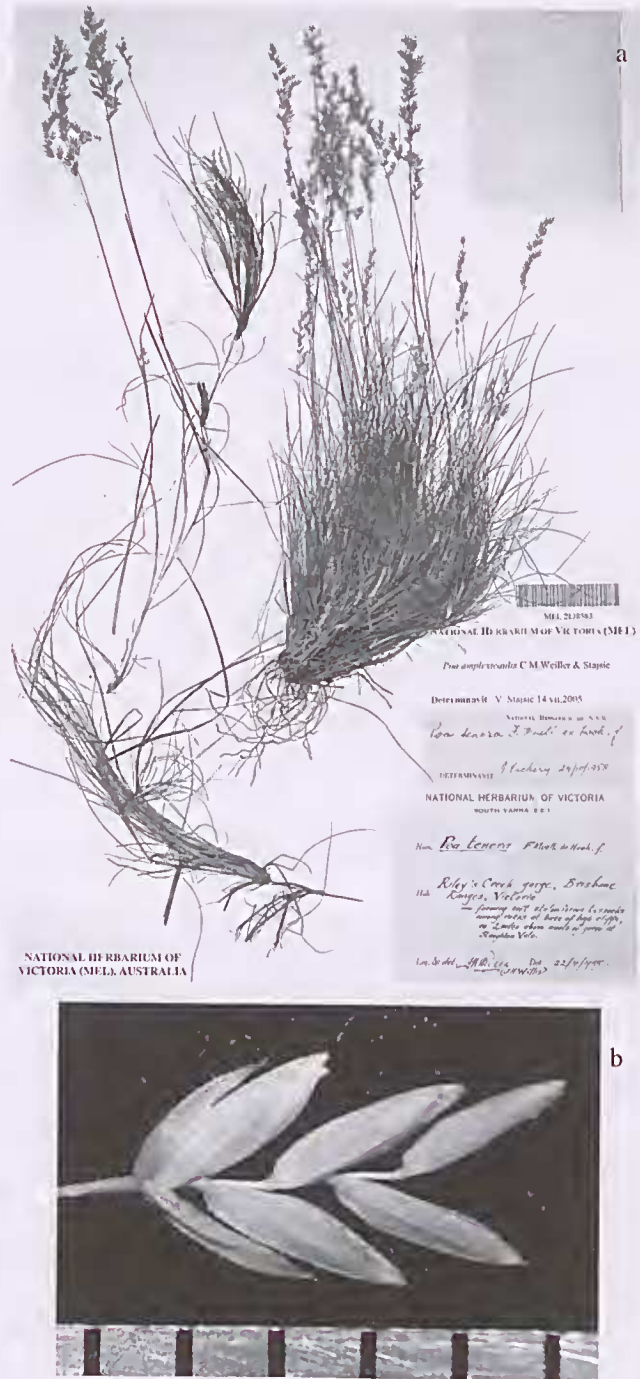


Figure 1. a. *Poa amplexicaulis* specimen; b. *Poa amplexicaulis* spikelet (all from Willis s.n., MEL 213583). Scale interval 1 mm

scaberulous towards apex; web absent. Palea slightly shorter than its lemma, glabrous. Anthers 1.1–1.4 mm long. (Fig. 1 a,b)

Distribution and habitat: *Poa amplexicaulis* is apparently endemic to the upper Werribee River catchment, south-central Victoria, occurring in the Brisbane Ranges, Werribee Gorge and further north to the Bullengarook area in the Pyrite Range, but apparently absent from the intervening White Elephant Range (where soils are derived from Tertiary deposits). Although it may be a locally dominant grass, it is nationally rare with Risk Code assessed here as 'rare', 2RCi (sensu Briggs & Leigh 1996) or 'near threatened', NT (sensu IUCN 2001). It has been observed to resprout following fire. It occurs in dry open-forests with dominant species including *Encalyptus tricarpa* (L.A.S. Johnson) L.A.S. Johnson & K.D. Hill, *E. macrorhyncha* Fr. Muell. ex Benth., *E. gontocalyx* F. Muell. ex Miq., *Astroloma humifusum* (Cav.) R. Br., *Boronia anemonifolia* A. Cunn., *Bossiaea orbordata* (Vent.) Druce, *Brachyloma daphnoides* (Sm.) Benth., *Dillwynia* spp., *Joycea pallida* (R. Br.) H.P. Linder, *Platysace lanceolata* (Labill.) C. Norman, *Pomax umbellata* (Gaertn.) Sol. ex A. Rich., *Pseudanthus orbiculatus* (Muell. Arg.) Halford & R.J.F. Hend. and *Pultenaea gummii* Benth. subsp. *inberculata* Corrick. Soils are characteristically shallow, often rocky, derived from Ordovician sediments.

Etymology: The epithet *amplexicaulis* (Latin *amplexus* - to encircle; *caulis* - stem) refers to the connate sheath and culm encircling ligule.

Notes: Distinctive features of *Poa amplexicaulis* are the fully connate, conspicuously red leaf sheaths, and the distinct membranous ligule decurrent and encircling the culm. This species is referred to by Walsh (1994, p. 424) in a note under the account of *Poa tenera* F. Muell. ex Hook. f. *Poa amplexicaulis* is further distinguished from typical specimens of *P. tenera* by the sparsely hairy to almost glabrous florets and indistinct lemma nerves.

Specimens examined: Victoria, Brisbane Ranges National Park – Stony Ck, from picnic ground on Switchback Rd to Lower Reservoir, 23 Nov. 1977, E.G. Errey 1295A (MEL); McCleans H'Way E of Switchback Rd junction, 6.5 km N of Anakie, 1 Oct. 1977, A.C. Beaglehole 56606 & E.G. Errey (MEL); c. 250 m SW of Aeroplane Rd turnoff on Reids Rd, 26 Oct. 1992, V. Stajsic 617, D.E. Albrecht & I.C. Clarke (HO, K, MEL, S); NE corner near intersection of Aeroplane Rd and Mt Wallace Rd, 26 Dec. 1991, V. Stajsic 415 & P. Włodarczyk (HO, K, MEL, S); Bacchus Marsh Rd junction of Aeroplane Rd, 6 km NE of Mt Wallace Primary School, 2 Oct. 1977, A.C. Beaglehole 56758 & E.G. Errey (MEL, NPS, RSA); Just off the Melton-Gisborne Rd, between Gisborne and Toolern Vale, 20 Nov. 1992, V. Stajsic 669 (AD, BRI, K, MEL, NSW); Werribee Gorge State Park, Ironbark (Ingliston) Rd, c. 12 km E of Ballan, 15 Aug. 2001, N.G. Walsh 5361 (MEL).

2. *Poa orthoclada* N.G. Walsh *sp. nov.*

Poa sp. aff. *gummii*, J.H. Ross & N.G. Walsh, Census Vasc. Pl. Victoria 7th edn. 37, 228 (2003).

Poa fawcettiae Vickery affinis caulibus erectis rigidis ramosis, foliis erectis tenuioribus brevioribus, ligula membranacea longiore, flosculis glabris vel glabriusculis differt.

Type: Victoria, Snowfields. Alpine National Park, Wonnangatta-Moroka Unit. Foot of Neilsons Crag (The Watchtower), c. 7.7 km NE from Mt Arbuckle, 15.xii.2000 N.G. Walsh 5272, (holotype MEL 2089860; isotypes CANB, NSW).

Slender perennial, caespitose, stems usually stiffly ascending with intravaginal branching above base. Leaves basal and cauline. Culms erect, to c. 60 cm high. Mid-culm internodes more or less terete or weakly biconvex, glabrous, smooth, rarely scaberulous, often purplish. Sheaths glabrous, smooth, usually purplish-pigmented; margins connate for up to c. 1/4 of their length. Ligule 0.3–1 mm long, thinly membranous, truncate, distinctly ciliate at apex with cilia c. 0.2 mm long, abaxially ciliolate. Leaf blades dull slaty green, bluish, or distinctly pruinose, inrolled-terete (rarely closely folded), usually stiffly erect, mostly 6–15 (rarely to 40) cm long, c. 0.5 mm diam. (to 1.2 mm wide when flattened), generally smooth but usually minutely scaberulous on margins and near apex. Inflorescence a narrow panicle, to 15 cm long and 8 cm wide, but commonly under 8 cm



Figure 2. a. *Poa orthoclada* holotype; b. *Poa orthoclada* spikelet (from holotype). Scale interval 1 mm.

long and 4 cm wide. Spikelets 3–7-flowered, 4–6 mm long, green or, more commonly, tinged purple. Glumes often shining, 1.8–2.4 mm long, subequal or the lower slightly shorter than upper, both 3-nerved and scaberulous along the keel. Lemma 1.6–3 mm long, relatively narrow, oblong to narrowly oblong-ovate in profile, 2–3 mm long, 5-nerved, nerves smooth or the midnerve minutely and sparsely scabrous, wholly glabrous, or puberulous on the lower part of the midnerve and, rarely, lateral nerves; intercostal regions glabrous; web absent or very weakly developed usually on only the lowermost lemma(s) within a spikelet. Anthers 1.4–1.8 mm long. (Fig. 2 a,b)

Distribution and habitat: Endemic in eastern Victoria where apparently confined to catchments of the Macalister, Avon, Moroka and Wonnangatta Rivers, in an area bounded roughly by Heyfield in the south, Dargo to the east and The Bluff to the northwest. Although rare at a national level, *P. orthoclada* is locally common and sometimes the dominant grass. It is well represented in the Alpine National Park, Wonnangatta-Moroka Unit. Its Risk Code is assessed here as 'rare', 2RCa (*sensu* Briggs & Leigh 1996) or 'near threatened', NT (*sensu* IUCN 2001). Grows in well drained, typically elevated and rocky sites supporting dry woodland dominated by e.g. *Eucalyptus dives* Schauer, *E. glaucescens* Maiden & Blakely, *E. pauciflora* Sieber ex Spreng., *E. polyanthemos* Schauer, *E. sieberi* L.A.S. Johnson, or occasionally in rocky outcrop shrublands of e.g. *Calytrix tetragona* Labill., *Leptospermum brevipes* F. Muell. Recorded altitudes range from 150 to 1520 m a.s.l., and soils are typically shallow to skeletal and derived from Carboniferous, Devonian or Ordovician sandstones, shales or conglomerates, sometimes serpentinitic.

Etymology: The epithet (Greek *orthos* – upright; *clados* – branch) refers to the stiff, more or less erect stolons or branched culms.

Notes: Superficially resembles *P. fawcettiae*, but distinguished from that species by the stiffly erect, branching stems, the finer and usually shorter, erect leaf blades, the longer membranous and ciliate ligule and the more or less glabrous florets. It also resembles *P. amplexicaulis*, described above, but differs from that in the narrower, inrolled, stiffer, often bluish leaf blades, the leaf sheaths that are only shortly connate, and the shorter, ciliate ligule.

The species was treated by Walsh (1994, p. 425) as *Poa gunnii* Vickery but reference to a larger suite of material of that Tasmanian species has shown the new species to differ in a number of characters (e.g. erect, branching habit of the culms, shorter ligules, ±pruinose leaf-blades, generally shorter glumes and lemmas and shorter anthers).

Representative specimens (23 specimens examined): Macalister River Catchment – Dolodrook River, 25 Oct. 1972, E.A. Chesterfield (MEL); Spur between Peters Ck and Macalister R., 19 Nov. 1973, E.A. Chesterfield (MEL); W of Glenfalloch, 3 Nov. 1973, E.A. Chesterfield (MEL); Mt Hump, 5 Jan. 1974, E.A. Chesterfield (MEL). Gippsland Lakes Hinterland Study Area – Glenmaggie Regional Park, 21 Oct. 1984, A.C. Beauglehole 78686 (MEL, BRI). Eastern Highlands, E of Mt Eliza Gap, 15 Nov. 1992, E.A. Chesterfield 3510 (CANB, MEL). Alpine, c. 1.5 km SE of the main Snowy Bluff summit 18 Mar. 1992, D.E. Albrecht 4928 (MEL).

3. *Poa orba* N.G. Walsh *sp. nov.*

Poa colensoi auct. non Hook. f.; J.H. Willis, *Handb. Vasc. Pl. Victoria* 1: 100 (1970); N.G. Walsh, *Fl. Victoria* 2: 415, 418 (1994); J.H. Ross & N.G. Walsh, *Census Vasc. Pl. Victoria*, 7th edn, 37, 228 (2003)

Poa fawcettiae Vickery similis sed laminis foliorum latioribus brevioribus, ligula longiore, rhizomatibus facientibus, lemmatis glabris differt.

Type: Victoria, Eastern Highlands. Shores of Lake Omeo, Benambra, 9.xi.1939, R.A. Black, herb, No 1235.008(7) (holotype MEL 2021761).

Rhizomatous perennial, producing (often remote) slender leafy tufts; rhizome internodes sometimes slightly swollen. Leaves all basal. Culms 5–15 cm high. Mid-culm internodes glabrous, often slightly compressed. Young shoots extravaginal. Basal leaf sheaths glabrous, not coloured or slightly purpled, margins connate near base, glabrous,

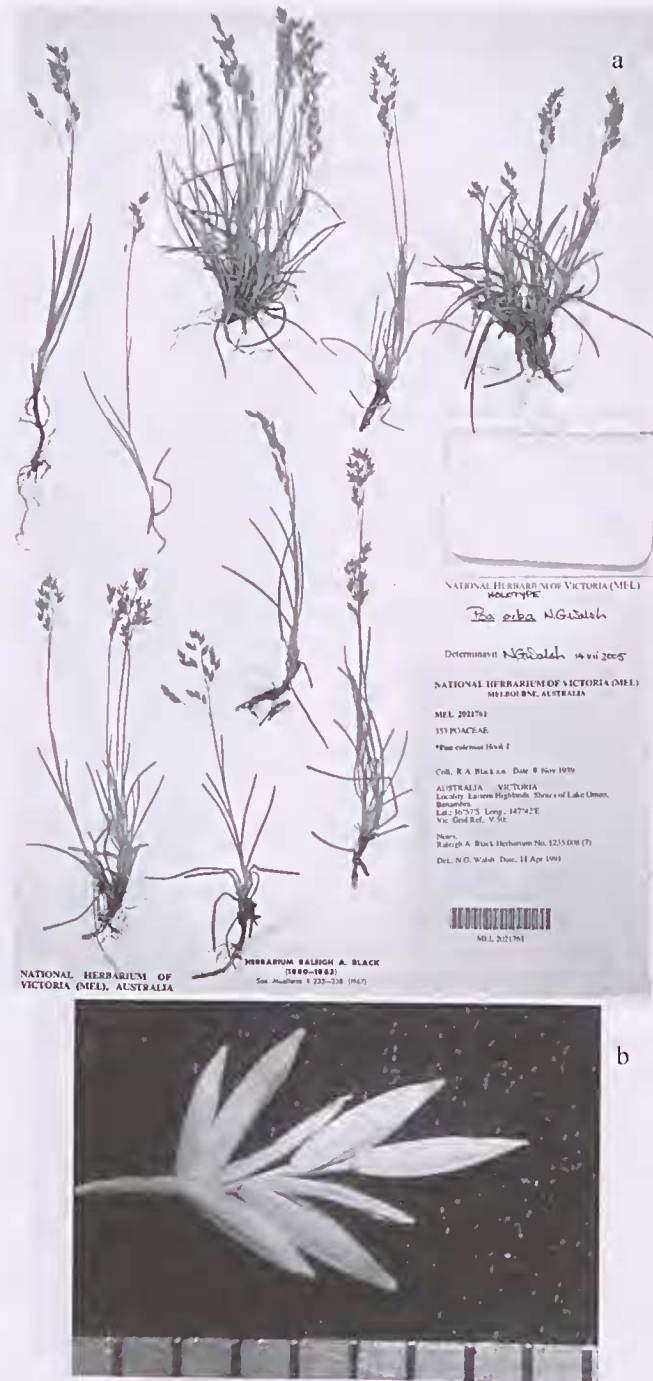


Figure 3. a. *Poa orba* holotype; b. *Poa orba* spikelet (from holotype). Scale interval 1 mm.

smooth; ligule 0.9–3.5 mm long, truncate to obtuse, sometimes shallowly lacerate, apically glabrous, abaxially minutely puberulous. Leaf blades channelled to closely folded, sometimes \pm biconvex, 4–8 cm long, 0.8–1.5 mm wide (to 3 mm wide when flattened), stiff, glaucous, adaxially papillose to puberulous, abaxially glabrous, sometimes minutely scabrous near margins, narrowly hooded and pointed at apex. Panicles somewhat contracted to open, 2–6 cm long. Spikelets with (2–) 3–5 florets, 4–7 mm long. Glumes pale or slightly purplish; lower glume 1- or 3-nerved, 1.9–2.7 mm long; upper glume 3- or 5-nerved, 2.1–2.9 mm long. Lemma 2.3–3.2 mm long, 5–7-nerved, often with a subapical pigmented band, occasionally nearly all purple or sometimes entirely devoid of purple pigment; 5-nerved, nerves smooth and glabrous throughout or the midnerve sparsely and minutely scabrous toward the apex; intercostal regions smooth and glabrous; web absent. Palea subequal to or slightly longer than its lemma, scabrous-ciliate along keels. Anthers 1.2–1.6 mm long. (Fig. 3 a,b)

Distribution and habitat: *Poa orba* is endemic in Victoria and known only from the shores and topographically higher ground of the bed of Lake Omeo, Benambra where it is locally dominant. The lake (usually dry) forms a large part of the town common and is used for cattle grazing. The local airstrip occupies part of the lake perimeter. *Poa orba* is here considered to be 'vulnerable', with Risk Code assessed as 2Vi (sensu Briggs & Leigh 1996) or VU C1+2a(i,ii); D1+2 (sensu IUCN 2001). It grows in stony, cracking calcareous clay soil at c. 700 m altitude in a low halophytic herbfield with *Pelargonium* sp. 1 (sensu Smith & Walsh 1999), *Samolus repens* (J.R. Forst. & G. Forst.) Pers., *Schoenus nitens* (R. Br.) Poir. ex Roem. & Schult., and *Wilsonia rotundifolia* Hook.

Etymology: The epithet (Latin, *orbis* – an orphan) alludes to its long rejection as an indigenous plant by Victorian botanists, and also to its unclear phylogenetic relationship to other native *Poa* species.

Notes: This species has previously been regarded as a form of *Poa colensoi* Hook. f. and presumed to have been introduced from New Zealand where that species is native. However it differs significantly in the presence of rhizomes, and in the lack of a distinct abscission line at the leaf sheath-blade junction, also in its occurrence in a saline or subsaline habitat (*P. colensoi* being unknown from such situations). It superficially resembles native *Poa fawcettiae*, but differs in the rhizomatous habit, short leaf blades, long ligule and quite glabrous lemmas. It does not appear to be very closely related to any known native *Poa* species. It could not be matched with keys or descriptions of any *Poa* species from likely countries of introduction (Europe, S. America, N. America, S. Africa, New Zealand). A number of other species are known to be either restricted to Lake Omeo or have it as one of only a few known localities (e.g. *Lepidium aschersonii* Thell., *Pelargonium* sp. 1, *Senecio georgianus* DC. – presumed extinct, and *Stemmacantha australis* (Gaudich.) Dittrich. – extinct in Victoria), supporting the likelihood of *Poa orba* being a localised endemic.

Specimens examined: (all from the type locality) Vic.: 1 Feb. 1944, & 6 Dec. 1944, S.G.M. Fawcett s.n. (both MEL); N.G. Walsh 5906 (MEL); N.G. Walsh 6198 (K, MEL).

References

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